Evalua Continuing Calibration R ort

Data File : K:\CHEMSTN\GCV\DATA\QV0551\GCV6177.D Vial: 2
Acq On : 22 May 96 12:27 PM Operator: JBRIESE
Sample : CCV#1-BTEXM-50PPB Inst : GCV
Misc : GCV-0101;VV052296 Multiplr: 1.00

Method : K:\CHEMSTN\GCV\METHODS\PVOCH2O.M
Title : PVOC in Water; Calib. Date: 5/7/96
Last Update : Wed May 15 12:52:02 1996
Response via : Multiple Level Calibration

		Compound	AvgRF	CCRF		%Dev
1	t	MTBE	458.331	495.501	E3	-8.1
2	T	BENZENE	1.202	1.259	E6	-4.8
3	S	aaa-Trifluorotoluene	411.103	445.352	E3	-8.3
4	T	TOLUENE	1.075	1.188	E6	-10.5
5	T	ETHYLBENZENE	818.513	917.700	E3	-12.1
6	T	M-PXYLENE	1.098	1.178	E6	-7.3
7	T	0-XYLENE	1.006	1.036	E6	-2.9
8	S	BROMOFLUOROBENZENE	935.527	963.317	E3	-3.0

(#) = Out of Range SPCC's out = 0 CCC's out = 0
GCV5856.D PVOCH2O.M Tue May 28 13:26:33 1996

Response Factor Report GC

Method : K:\CHEMSTN\GCV\METHODS\PVOCH2O.M
Title : PVOC in Water; Calib. Date: 5/7/96
Last Update : Wed May 15 12:52:02 1996
Response via : Initial Calibration

Calibration Files
2ppb =GCV5853.D 5 =GCV5854.D 10 =GCV5855.D
50 =GCV5856.D 100 =GCV5857.D

	RT	Compound	2ppb	5	10	50	100	Avg		%RSD
1)	2.29	MTBE	572.5	519.8	343.0	456.7	399.6	458.3	E3	19.98
2)	3.98	BENZENE	1.3	1.2	1.2	1.2	1.2	1.2	E6	4.75
3)	5.38	aaa-Trifluorotoluene	411.0	362.4	444.2	425.4	412.4	411.1	E3	7.37
4)	7.08	TOLUENE	1.1	1.0	1.1	1.1	1.1	1.1	E6	2.80
5)	9.86	ETHYLBENZENE	803.5	768.0	799.2	880.8	841.0	818.5	E3	5.30
6)	10.08	M-PXYLENE	1.2	1.1	1.1	1.1	1.1	1.1	E6	4.04
7)	10.73	O-XYLENE	1.1	1.0	1.0	1.0	0.9	1.0	E6	7.47
8)	11.56	BROMOFLUOROBENZENE	989.4	932.4	911.8	938.1	906.0	935.5	E3	3.53
9)	12.69	135-TRIMETHYLBENZENE	848.6	828.5	956.6	1155.2	1111.3	980.0	E3	15.19
10)	13.32	124-TRIMETHYLBENZENE	577.4	597.3	714.0	878.9	843.9	722.3	E3	19.08

(#) = Out of Range

PVOCH2O.M Tue May 28 13:29:05 1996

Request for Chemical Analysis and Chain of Custody Record

Burns & McDonnell
Waste Consultants, Inc.
10881 Lowell Avenue, Suite 200
Overland Park, Kansas 66210
Tel: (816) 333-8787
Fax: (816) 822-3463

Laboratory: IEA INC
Address: 126 W. Center Court
City/State/Zip: Schaumburg IL 60195
Telephone: 708/705-0740

Document Control No.:
Lab. Reference No. or Episode No.:

Attention: Mr Greg Nieman
Project Number: 95-465-4-501
Project Name: Amoco Xylene
Site, Group, or SWMU Name:

Sample Number		Sample Event		Sample Depth (in feet)		Samples Collected		Sample Type: Matrix					Number of Containers	Analysis: Xylene	Analysis: GAC					Remarks
Sample Point	Sample Designator	Round	Year	From	To	Date	Time	Liquid	Solid	Gas	Composite	Grab								
MW-JLM030	/GW-1	1	1996	NA	NA	May 8 1996	1330	X				X	3	X						No Preservative
MW-JLM031	/GW-1	1	1996	NA	NA	May 8 96	1130	X				X	3	X						HCL
MW-JLM032	/GW-1	1	1996	NA	NA	May 8 96	1430	X				X	3	X						No Preservative
MW-PZX1	/GW-1	1	1996	NA	NA	May 8 96	1345	X				X	3	X						HCL
MW-PZX0	/GW-1	1	1996	NA	NA	May 8 96	1345	X				X	3	X						No Preservative
MW-JLM031	/GW-ERB	1	1996	NA	NA	May 8 96	1030	X				X	2	X						HCL
MW-JLM032	/GW-1MSD	1	1996	NA	NA	May 8 96	1430	X				X	6	X						For MS/MSD Analyses
TB 5-8-96		1	1996	NA	NA	May 8 96	NA	X				X	2	X				HCL		No Preservative

GAC

Note: Samples are fairly high except MW-JLM031/GW-ERB # TB-5-8-96.

GAC 5/8/96

Sampler (signature):
Sampler (signature):

Special Instructions: # - Samples do not Have Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
1. (signature)	5/8/96 1400	(signature)	5-9-96 1000
Relinquished By:	Date/Time	Received By:	Date/Time
2. (signature)		(signature)	

Condition of Shipping Container: Good [X] Fair [ ] Poor [ ]
Ice Present in Container: Yes [X] No [ ]
Comments:

Burns & McDonnell Waste Consultants, Inc.

022194 form WCI-OP1

APPENDIX D

QUALITY ASSURANCE\ QUALITY CONTROL REVIEW

Burns & McDonnell	Waste Consultants, Inc.

MEMORANDUM

Date: June 18, 1996

To: Greg Nieman
Scott Kolb

From: Christine Rice

Re: QA/QC Review of Analytical Data
Project Number 95-465-4-501 (AMOCO Xylene GESD)

Soil samples were collected from May 1 through 3, 1996, and groundwater samples were collected on May 8, 1996. Industrial Environmental Analysts (IEA) of Cary, North Carolina analyzed the samples for Total Xylenes by SW-846 Method 8020A. The attached checklists were used to review the sample results for Level III and modified Level IV review items. The checklist items were reviewed as recommended by *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (NFGO), USEPA 1993. The quality assurance/quality control (QA/QC) review results are discussed below.

1. Chain-of-Custody - The chain-of-custody (COC) forms were signed by the relinquisher and the receiver.

2. Requested Analyses Completed - All requested total xylene analyses were completed.

3. Holding Times - All samples were analyzed within the required 14 day holding time.

4. Sample Preservation Acceptable - All samples were received by the laboratory at the required temperature.

5. Laboratory Method Blanks - The laboratory method blanks contained no positive detections of the target analytes.

6. Rinsate Blanks - No positive detections of target analytes were reported in the rinsate blanks.

7. Trip Blanks - No positive detections of target analytes were reported in the trip blanks.

8. Surrogates - Surrogates are typically added for organic analyses. Surrogates are compounds not normally found in the environment which are added (spiked) into the samples and analyzed for

percent recovery (REC). Limits on the REC are set by the laboratory for the method used. All surrogate RECs were within the required QC limits.

9. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses - MS/MSDs are typically run for organic analyses. A known amount of an analyte is added (spiked) to two portions of the same sample. The results of these two portions are compared against each other for reproducibility. They are also compared against the unspiked portion of the sample for percent recovery of the spike. Limits on the spike REC are set by the laboratory for the method used.

IEA analyzed a soil MS/MSD on Sample JLM032-1 and associated it with the soil samples. The total xylenes MSD REC was 241 percent, which exceeded the QC maximum of 135 percent. The relative percent difference (RPD), 64 percent, also exceeded its 20 percent QC limit.

An MS/MSD analysis was performed on groundwater Sample MW-JLM032/GW-1 and associated with the groundwater samples. All RECs and RPDs were within the QC limits.

11. Field Duplicates - Field duplicate results provide information on the ability to reproduce field results and account for error introduced from handling, shipping, storage, preparation, and analysis of field samples. Two sets of field duplicates were collected during this sampling event. There are no specific EPA guidelines for qualifying data from field duplicate results. For the purpose of QC evaluations, WCI has applied the criteria for inorganic duplicate analyses, found in *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (1994), to the field duplicates:

- Was the same compound detected in both samples?
- For analytes where both results were greater than five times the lower quantitation limit, was the RPD less than 35 percent for soil samples or 20 percent for water samples?
- For analytes where at least one of the results was less than five times its quantitation limit, were the results within plus or minus (±) two times the quantitation limit of each other for soil samples or within ± the quantitation limit of each other for water samples.

Field Duplicate Results			
Parameter	Sample JLM031-1	Sample JLM031-6	Meets QC Criteria? (Y/N)
Total Xylenes	320 µg/kg	460 µg/kg	N (RPD=36%)
Parameter	Sample MW-JLM030/GW-1	Sample MW-P2XO/GW-1	Meets QC Criteria? (Y/N)
Total Xylenes	53 µg/L	52 µg/L	Y (RPD=1.9%)

12. Quantitation Limits - The following samples had quantitation limits raised by the indicated dilution factors (DF) to account for concentrations of total xylenes above the calibration range.

Groundwater Sample	DF
MW-P2X1/GW-1	2

Soil Samples	DF
JLM029	10,000
JLM031-6	5
JLM031-1	5
JLM032-1	5

13. Initial Calibrations - Initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning of the analytical run. It also demonstrates that the instrument can produce a linear calibration curve. As specified in NFGO and SW-8020A, the following initial calibration results were reviewed:

- The correct concentrations of standards were used
- The percent relative standard deviation (%RSD) values were less than 30 percent. The % RSD of the RRFs for a given compound are calculated as follows:

$$\%\ RSD = \frac{\text{Standard Deviation of the RRFs for a given Compound}}{\text{Average RRF for that Compound}} \times 100$$

All initial calibration runs were analyzed with the correct concentrations of standards and the %RSD values were within the QC limits.

14. Continuing Calibrations - Continuing calibration results are used to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration

standards are analyzed at the beginning of each 12-hour analysis period in order to check instrument performance against the initial calibration.

The maximum percent difference (%D) between the initial calibration RRF and the continuing calibration RRF for a given compound, as required by NFGO, is 25 percent. %D is calculated as follows:

$$\%\ D = \frac{RRF_{IC} - RRF_{CCV}}{RRF_{IC}} \times 100$$

Where:

RRF_{IC} = Average relative response factor of the target analyte from the initial calibration

RRF_{CCV} = relative response factor of the target analyte from the continuing calibration analysis

All %Ds were below 25 percent. Therefore, the continuing calibration analyses met the QC guidelines.

15. Conclusion - No data were qualified from the QA/QC review. Therefore, the results of the data review indicate that the data are valid for use in reporting the results of this investigation.

Organic Data Validation Checklist

SDG No.: L2960796
Project Name: Amoco Xylene GESD
Project No.: 95-465-CP-5011
Site: GW
Laboratory: IEA
Analysis Type: Xylenes, Total

Instructions:

1. Initial and date this form at the start and end of review for this SDG.
2. Place a check mark in the "NA" column when the review item was not applicable.
3. When review of a checklist item is complete, place a check mark in the "Reviewed" column.
4. Place an "NS" designation in the "Reviewed" column when applicable data were not supplied.
5. Place a check mark or an "NR" in the "Qualified" column if related data did or did not require qualification, respectively.
6. See "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1993, for validation purposes.
7. Level IV review is generally performed on 5-10% of all sample results; actual percentage is project specific.
8. Place a check mark in the box at the beginning of the Level IV section if no associated raw data were reviewed.

	NA	Reviewed	Qualified	Comments
Level III Review Item				
Signed Chain-of-Custody Available		✓	NR	
Requested Analyses Completed		✓	NR	
Holding Times Met		✓	NR	
Sample Preservation Acceptable		✓	NR	
Laboratory Method Blank Results		✓	NR	
Field Blank Results		✓	NR	
Trip Blank Results (VOC only)		✓	NR	
Surrogate Recoveries		✓	NR	
MS/MSD Results		✓	NR	
Field Duplicates		✓	NR	
Quantitation Limits		✓	NR	
Level IV Review Item	☒ = Summary Sheets Only			
GC/MS Tuning	✓			
Initial Calibrations		✓	NR	
Continuing Calibrations		✓	NR	
Internal Standards	✓			
Enhanced Level IV Review Item				
Compound Identification	✓			
Compound Quantitation	✓			

Date Started/ Reviewer: 6/18/96 C. Rice

Date Completed/ Reviewer: 6/18/96 C. Rice

Organic Data Validation Checklist

SDG No.: L72960 ~~220~~ OK
Project Name: AMOCO Xylene GESD
Project No.: 95-465-4-501

Site: Soil
Laboratory: IEA
Analysis Type: Xylenes, Total

Instructions:

1. Initial and date this form at the start and end of review for this SDG.
2. Place a check mark in the "NA" column when the review item was not applicable.
3. When review of a checklist item is complete, place a check mark in the "Reviewed" column.
4. Place an "NS" designation in the "Reviewed" column when applicable data were not supplied.
5. Place a check mark or an "NR" in the "Qualified" column if related data did or did not require qualification, respectively.
6. See "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1993, for validation purposes.
7. Level IV review is generally performed on 5-10% of all sample results; actual percentage is project specific.
8. Place a check mark in the box at the beginning of the Level IV section if no associated raw data were reviewed.

	NA	Reviewed	Qualified	Comments
Level III Review Item				
Signed Chain-of-Custody Available		✓	NR	
Requested Analyses Completed		✓	NR	
Holding Times Met		✓	NR	
Sample Preservation Acceptable		✓	NR	
Laboratory Method Blank Results		✓	NR	
Field Blank Results		✓	NR	
Trip Blank Results (VOC only)		✓	NR	
Surrogate Recoveries		✓	NR	
MS/MSD Results		✓	NR	MS/MSD was 01 SLM033-1 showed high MSD RECs
Field Duplicates		✓	NR	
Quantitation Limits		✓	NR	
Level IV Review Item	☐ = Summary Sheets Only			
GC/MS Tuning	✓			
Initial Calibrations		✓	NR	
Continuing Calibrations		✓	NR	
Internal Standards	✓			
Enhanced Level IV Review Item				
Compound Identification	✓			
Compound Quantitation	✓			

Date Started/ Reviewer: 6/13/96 C. Rice

Date Completed/ Reviewer: 6/18/96 C. Rice

P-File
Comp

Amoco Petroleum Products
Refining Business Group
Whiting Business Unit
2815 Indianapolis Boulevard
Post Office Box 710
Whiting, Indiana 46394-0710
219-473-7700

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

June 24, 1996

Mr. Gary Starks
Indiana Department of Environmental Management
Office of Water Management
105 South Meridian Street
Indianapolis, IN 46206-6015

Dear Mr. Starks:

NPDES Permit No. IN 0000108
Exceedance of Discharge Parameters at Outfall 001

This letter serves as a follow-up to our initial notification on Tuesday, June 18, 1996, concerning the exceedance of discharge parameters at Outfall 001. Daily maximum values were exceeded for total suspended solids (TSS), oil and grease (O&G), and chemical oxygen demand (COD). The analytical results for these parameters were obtained on Wednesday, June 19. The discharge loadings from Outfall 001 on June 18 based on these results are: oil and grease 5,070 lbs, total suspended solids 114,200 lbs, and chemical oxygen demand 157,891 lbs. It is also very likely that the permit limit for biochemical oxygen demand (BOD) was exceeded for the same day.

The exceedance for these parameters was limited to June 18, 1996. The discharge met all permit limits starting Wednesday, June 19, as documented by subsequent analytical testing. Heavy storm flow coupled with refinery process upsets led to increased loadings and flow to the activated sludge plant. These stresses to the activated sludge population caused the sludge beds in the clarifiers to rise resulting in a partial washout of the activated sludge from the clarifiers. As a result, the increased TSS loadings in the effluent caused the other parameters (oil and grease, chemical oxygen demand and most likely biological oxygen demand) to be exceeded.

For the day, the Lakefront Wastewater Treatment Plant processed 32.7 million gallons of flow, with an effluent to Lake Michigan of 22.7 million gallons (the difference, 10 million gallons, was recycled back to the refinery). The 32.7 million gallon flow is approximately 10 million gallons above average. Rainfall accumulation on June 17, 1996 from 11:00 to 24:00 consisted of 2.2 inches of precipitation, with 1.65 inches of that amount coming after 18:00.

Along with the severe storm event, the wastewater treatment plant had experienced higher than normal influent loading from previous refinery process upsets at the desalter. Solids, salts and water (contaminants found in crude in small amounts, i.e., less than 1% total concentration) are washed from crude in the desalter. The water wash is drained to the sewer and is treated at the wastewater treatment plant. An upset in the desalting process created an emulsion in the water wash and resulted in an increased loading to the process sewer. Although the treatment plant is capable of handling the desalter water wash, the emulsion created additional stress on the activated sludge population. Because of the increased loadings, water was impounded in the storm surge/equalization tanks (20 million gallon total capacity) and metered to the activated sludge plant at a lower rate.

Every possible effort was made to meet permit limits for June 17, 1996. The refinery implemented its water shedding plan beginning at 09:00 on June 17, 1996 in anticipation of the impending storms. The refinery water shedding plan reduces the water flow to the sewer by turning off or storing a number of streams that normally enter the process sewer. Some of these streams include the refinery wellpoint system used in the recovery of ground oil/water, water draws from aboveground storage tanks, and cooling tower blowdown. In addition, all units in the refinery minimized their water draining to the process sewer. As a result of all these steps, effluent quality was within permit limits on June 17, but the continued heavy influent water from the storm filled the storm surge/equalization tanks to capacity and caused the activated sludge beds to rise and wash out early on June 18.

Federal, state and local agencies were notified about the incident and the refinery initiated an extensive response effort which lasted two days. In addition to official notifications, we notified businesses, industries and municipalities in the area and provided them a description of the activated sludge solids. These included all local drinking water filtration plants, Inland Steel, LTV Steel, all local marinas, gaming vessels, Indiana Dunes National Lakeshore and the Department of Natural Resources. We also provided periodic updates of the response efforts. Mr. Eddy Depositar from the Office of Water and Mr. Ken Rhame from the Office of Emergency Response, were on-site for two days and observed the response efforts. The response included booming the Outfall to contain and recover the biological solids, dispersing the solids beyond the boom that floated on the surface and extensive monitoring of the shoreline and harbors. We did not observe any accumulation of these solids along the shoreline or harbors. Health concerns because of fecal coliform was also not an issue because the refinery wastewater treatment plant does not treat any sanitary wastes.

In order to improve the situation, Amoco decided to bypass the activated sludge plant (two aeration tanks and two clarifiers) as part of the response on June 18. The bypass around the activated sludge plant, which occurred at 15:44, resulted in the discharge of process water after it had been treated by the oil/water separator and the dissolved air flotation unit. The decision to bypass was based on the criteria specified in our NPDES permit. The main concern was that the wastewater treatment plant would become inoperable since additional rain was being forecast for Northwest Indiana that afternoon. The likelihood of rain along with the lack of available storage in the storm surge/equalization tanks would cause continued washout of activated sludge from the clarifier. As a result, the activated sludge plant would take an extended period of time to recover, as it would lose most of its biological treatment capability. In addition, there was also no other feasible alternative to store water in the refinery so that it could be treated later. We discussed our situation with Department officials in Indianapolis and the on-site personnel before initiating the bypass. The bypass around the activated sludge plant was stopped after 26 minutes at 16:10 because of a change in the weather forecast (the likelihood of rain was decreased and the expected time delayed) and because bypass water quality appeared poorer than what we expected.

The effluent from the plant was once again meeting permit limits on Wednesday, June 19. The absence of additional rain on June 18 was a significant factor in the quick recovery of the wastewater treatment plant. Other factors contributing to the quick recovery include:

1. The recent (June 1995) installation of an oxygen injection system to supply pure oxygen to the aeration tanks of the activated sludge plant in order to supplement the existing supply. This helped the activated sludge recover quickly from increased loadings.
2. A recently installed ring baffle in the clarifier tanks, which prevents biological solids from going over the weirs, was able to hold back the sludge once the beds stopped rising.
3. Increased upstream monitoring of the discharge from all units ensured that the loadings to the wastewater treatment plant were very low.
4. Continued implementation of the water shedding helped lower the flow to the treatment plant.

The refinery has an excellent record in maintaining compliance with its NPDES permit. This exceedance is only the second exceedance since 1984 for a process parameter. We take great pride in this record and have constantly made process and operational improvements at our wastewater treatment plant and in upstream control at the units. We do not expect further permit limit exceedances from this Outfall. We will continue to review the incident and take appropriate steps if necessary to prevent its recurrence. If you have any questions or would like additional information, please contact me at 219-473-3740.

Sincerely,

Shiv Baloo

Shiv Baloo
Team Leader-Water

cc: Petty Officer Mead (USCG)
Ken Rhame (IDEM)
Jan Henley (IDEM)
Eddy Depositar (IDEM)

p-file
Comp file HMN 5/30/96

Amoco Petroleum Products
Refining Business Group
Whiting Business Unit

2815 Indianapolis Boulevard
Post Office Box 710
Whiting, Indiana 46394-0710
219-473-7700

May 21, 1996

Ms. Heidi Nassiri
Indiana Department of Environmental Management
105 South Meridian Street
PO Box 6015
Indianapolis IN 46206-6015

Dear Ms. Nassiri:

New Product Performance Test - Amoco Refinery

Amoco's Wastewater Treatment Plant would like approval to test the performance of two polymers (Ultrion 8186 and Nalco 7190) by Nalco on the Air Flotation Unit and one polymer by Stockhausen (Praestol 187K) on 7 Separator. Further details about each chemical are presented below:

Ultrion 8186

a. Application: Coagulant for the AFU.
b. Aquatic data: See attached MSDS sheet (section 12).
c. Time duration of usage: This material will initially be evaluated in a short trial. This trial is expected to last 1 to 3 months. If the polymer performs well it could be used for 6 months to a year.
d. Start date of usage: As soon as possible.
e. Estimated dosage: 130 ml/min.
f. Concentration in the effluent to the lake: Very little of this material is expected in the effluent going to the lake. The majority of this material is expected to be removed in the water treatment process.
g. Dosage type: Continuous.

(Note: This material has been approved for use in potable water to a maximum dosage of 40 ppm).

Nalco 7190

a. Application: Flocculant for the AFU.
b. Aquatic data: See attached MSDS sheet (section 12).
c. Time duration of usage: This material will initially be evaluated in a short trial. This trial is expected to last 1 to 3 months. If the polymer performs well it could be used to 6 months to a year.
d. Start date of usage: As soon as possible.

e. Estimated dosage: 40 ml/min.
f. Concentration in the effluent to the lake: Very little of this material is expected in the effluent going to the lake. The majority of this material is expected to be removed in the water treatment process.
g. Dosage type: Continuous

(Note: Ultrion 8186 and Nalco 7190 will both be added to the AFU during the proposed trial. Jar tests suggest that better water quality can be achieved if both chemicals are simultaneously added to the process.)

Praestol 187K

a. Application: Coagulant for 7 Separator and AFU.
b. Aquatic data: See attached sheet.
c. Time duration of usage: This material will initially be evaluated in a short trial. This trial is expected to last 1 to 3 months. If the polymer performs well it could be used for 6 months to a year.
d. Start date of usage: As soon as possible.
e. Estimated dosage: 200 ml/min.
f. Concentration in the effluent to the lake: Very little of this material is expected in the effluent going to the lake. The majority of this material is expected to be removed in the water treatment process.
g. Dosage type: Continuous.

(Note: This material has been approved for use in potable water to a maximum dosage of 50 ppm.)

Please contact at (219) 473-3459 me if you require any additional information about these chemicals. If these chemicals pass the approval process they will be added to the SARA chemical inventory list and the MSDS sheets will be added to the Lakefront Wastewater Treatment Plant MSDS binder.

Sincerely,

Eric J. Larson
Environmental Engineer - Water

EJL/dv

Attachment

S. Baloo
G. T. Cook
M. E. Wheeler

P-File
Comp

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live

Evan Bayh
Governor
Kathy Prosser
Commissioner

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
Telephone 317-232-8603
Environmental Helpline 1-800-451-6027

May 6, 1996

Larry Malnor
Amoco Pipeline Company
One Mid-America Plaza
Highway 83 and 22nd Street
Oakbrook Terrace, Illinois 60181-4450

Dear Mr. Malnor:

Re: Amoco Oil Company and
Amoco Pipeline Company – Whiting
Cause No. B-1545
SCWP Report

Pursuant to Section II, 2 of the Agreed Order (AO) executed in this cause on October 23, 1995, you are hereby notified that the Indiana Department of Environmental Management (IDEM) has received the Soil Characterization Report. The Report is subject to review by IDEM. Results of the review will be communicated to you upon completion.

In addition, pursuant to Section II, 14 of the AO the stipulated civil penalties as they relate to compliance with paragraph 2 are deemed fully satisfied without payment of the dollar amount.

If you have any questions regarding this matter, please contact Liz Melvin of my staff at 317/232-8434. Thank you for your prompt attention to this matter.

Sincerely,

Mark W. Stanifer

Mark W. Stanifer, Chief
Water Enforcement Section
Office of Enforcement

cc: U.S. EPA Region 5, Office of Water
Hammond Department of Environmental Management
Lake County Health Department
Greg Nieman, Burns & McDonnell

P-file
Comp

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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Evan Bayh
Governor
Kathy Prosser
Commissioner

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
Telephone 317-232-8603
Environmental Helpline 1-800-451-6027

March 26, 1996

Larry Malnor
Amoco Pipeline Company
One Mid-America Plaza
Highway 83 and 22nd Street
Oakbrook Terrace, Illinois 60181-4450

Dear Mr. Malnor:

Re: Amoco Oil Company and
Amoco Pipeline Company - Whiting
Cause No. B-1545
SCWP and GESP Submittal

In response to the March 18, 1996, letter received from Greg Nieman, Burns & McDonnell, on behalf of Amoco Corporation and Amoco Pipeline Company, the thirty (30) day extension of time is granted. The new deadline date for the sumbittal of the groundwater evaluation report is May 23, 1996.

If you have any questions regarding this matter, please contact Liz Melvin of my staff at 317/232-8434.

Sincerely,

Mark W. Stanifer, Chief
Water Enforcement Section
Office of Enforcement

cc: U.S. EPA Region 5, Office of Water
Lake County Health Department
Greg Nieman, Burns & McDonnell

Amoco Petroleum Products
Refining Business Group
Whiting Business Unit

2815 Indianapolis Boulevard
Post Office Box 710
Whiting, Indiana 46394-0710
219-473-7700

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

March 4, 1996

Mr. Gary Starks
Indiana Department of Environmental Management
Office of Water Management
105 South Meridian Street
Indianapolis, IN 46206-6015

Dear Mr. Starks:

NPDES Permit No. IN 0000108
Violation of Maximum Daily Discharge on Oil & Grease - Outfall 004

This note confirms our conversation on Wednesday, 28 February 1996, notifying you of an exceedance of the maximum daily concentration of Oil & Grease in our stormwater Outfall 004 on Tuesday, 27 February 1996. On that day, the Oil & Grease (O&G) concentration was 15.2 mg/L, exceeding the maximum daily limit of 15.0 mg/L.

The Refinery received a heavy rainfall beginning Monday, 26 February 1996, at approximately 2100 hours and ending at approximately 0700 Tuesday, 27 February 1996. During one three-hour period in this storm event , approximately 0.9 inches of rain was measured. We do not believe this sampling event is representative of past Outfall 004 O&G Analyses as evidenced by the attached table. In addition, O&G samples taken upstream of Outfall 004 on 27 February 1996 were all below the maximum daily limit of 15.0 mg/L, and this was the first time in calendar year 1996 that Outfall 004 was opened and allowed to discharge. Following notification from our laboratory that Outfall 004 had exceeded the maximum daily limit of 15.0 mg/L, we immediately closed the aforementioned outfall and it has not been opened since.

We do not expect further O&G exceedances from this outfall; and, we will continue to review the cause of this elevated O&G level and take the appropriate steps necessary to prevent its re-occurrence. If you have any questions or comments regarding the above information, please contact me at 219-473-3740.

Sincerely,

Shiv Baloo
Team Leader - Water

Attachment

Outfall 004 O&G Analyses 1994-1995					
1994	**O&G (ppm)**		**1995**	**O&G (ppm)**	
Jan-94	closed		15-Jan-95	1.7	
18-Feb-94	1.8		19-Jan-95	5.4	
20-Feb-94	2.3		Feb-95	closed	
Mar-94	closed		Mar-95	closed	
Apr-94	closed		9-Apr-95	2.9	
1-May-94	1.9		May-95	closed	
24-Jun-94	4.9		8-Jun-95	3.8	
27-Jun-94	2.5		28-Jun-95	4.1	
Jul-94	closed		Jul-95	closed	
4-Aug-94	1.2		4-Aug-95	2.4	
7-Aug-94	1.4		Sep-95	closed	
11-Aug-94	1.2		Oct-95	closed	
14-Aug-94	1.8		11-Nov-95	6.6	
21-Aug-94	3.4		12-Nov-95	2.7	
4-Sep-94	1.6		19-Nov-95	2.1	
10-Oct-94	5.3		26-Nov-95	1.8	
31-Oct-94	2.9		1-Dec-95	2.5	
6-Nov-94	0.5				
7-Dec-94	3.2				
11-Dec-94	11.0				
AVG	2.9		AVG	3.3	
MAX	11.0		MAX	6.6	
"closed" means there was no discharge from Outfall 004 for the entire month					

P-file

Burns & McDonnell | Waste Consultants, Inc.
ENGINEERS-GEOLOGISTS-SCIENTISTS · 100% EMPLOYEE-OWNED

February 15, 1996

Mr. Mark W. Stanifer
Chief Water Enforcement Section
Indiana Dept of Environmental Management
100 North Senate Avenue
PO Box 6015
Indianapolis, Indiana 46206-6015

Re: Amoco Corporation and Amoco Pipeline Company
SCWP and GESP Comments
Cause No. B-1545
BMWCI Project Nos: 95-465-4-501 and 502

Dear Mr. Stanifer:

This letter is in response to your January 29, 1996, letter regarding the Soil Characterization Work Plan (SCWP) and Groundwater Evaluation Study Plan completed for the Amoco Corporation and Amoco Pipline Company sites, respectively. The SCWP and GESP were completed in order to satisfy the requirements of the Amoco and Indiana Department of Environmental Management (IDEM) negotiated Agreed Order (Cause No. B-1545).

Your letter approved both plans with the stipulation that three IDEM comments (one for the SCWP and two for the GESP) be incorporated within the final plans. These comments and Amoco's responses to these comments are listed below, addressing each item in the same order as in your letter.

1) SCWP Comment: Figure 3 shows one sample will be collected in the ditch and four samples in the sides. This is an insignificant number of samples to determine the extent of contamination in the ditch and to the waters of Indiana. Sampling of the ditch and sides should be performed down the length of the ditch until no more VOC's are detected or the Indiana Harbor Ship Canal is reached.

Response: The number of soil samples proposed for the outfall investigation presented in the SCWP was based upon the scope of work agreed to by IDEM and Amoco, as outlined in the Agreed Order (Cause No. B-1545), Part II, No. 1. This portion of the agreed order required Amoco "to conduct a Soil Characterization Work Plan....which will, upon completion, identify the location, volume, quality, and regulatory status of the contaminated soil, if any, in the immediate vicinity of the ditch near the outfall". This approach was agreed to by both parties

10881 Lowell, Overland Park, Kansas 66210
Phone (816)333-8787 Fax (816)822-3463
ESTABLISHED 1898

State Form 4336

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

INDIANAPOLIS

OFFICE MEMORANDUM

Date: March 5, 1996

To: Liz Melvin
Water Enforcement
Office of Enforcement

Thru: Michael Sickels MES 3/6/96
Mark Stanifer MWS 3-7

From: Chris Myer CM 3-6-96
Corrective Action Section
Hazardous Waste Management Branch
Office of Solid and Hazardous Waste Management

Subject: Responses to Amoco Corporation and Amoco Pipeline Company SCWP and GESP comments.

The Corrective Action Agreed Order can address the drainage ditch.
Rest of Amoco's responses are acceptable.

Own
Dan V.
p-file

Amoco Petroleum Products
Refining Business Group
Whiting Business Unit

2815 Indianapolis Boulevard
Post Office Box 710
Whiting, Indiana 46394-0710
219-473-7700

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

February 13, 1996

Ms. Kathy Prosser
Commissioner
Indiana Department of Environmental Management
Office of the Commissioner
100 N Senate Street
PO Box 6015
Indianapolis IN 46206-6015

Dear Ms. Prosser:

Notice of Change in Refinery Manager
Whiting Refinery - NPDES Permit IN0000108

In accordance with 327 IAC 5-2-22(c), this is to notify you that Daniel H. Wilson has assumed the duties of Refinery Manager, effective November 1, 1995. Mr. Wilson replaces Richard B. Sheldon.

Sincerely

Shiv Baloo

Shiv Baloo
Team Leader - Water

SB/dv

P-File
Comp

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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Evan Bayh
Governor
Kathy Prosser
Commissioner

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
Telephone 317-232-8603
Environmental Helpline 1-800-451-6027

January 11, 1996

VIA CERTIFIED MAIL Z 411 843 893

AMOCO OIL COMPANY
2815 INDIANAPOLIS BLVD
PO BOX 710
WHITING, IN 46394-0710

Dear Facility:

NPDES Permit No.: IN0000108
Facility Type: MAJORIND
Re: Annual NPDES Permit Fee Assessment

Please find enclosed the 1996 annual NDPES permit fee assessment for your facility. The fees for your facility are due on 03/11/1996. Along with the assessment, the fee packet includes some or all of the following information depending on your facility type:

- A pre-signed claim form
- Important Facts Concerning the Calculation of Annual Flow Fees
- How to Reduce Flow Rates at Wastewater Treatment Plants
- Pertinent sections of IC 13-7-16.1, which includes fee schedules
- Questions & Answers About Permit Fees
- Important Information for Permittees

Your permit fees will be utilized, at least in part, to assist the regulated community in complying with pertinent environmental regulations. During the coming year, the Indiana Department of Environmental Management (IDEM) will continue to provide educational and technical assistance to Indiana businesses. Also enclosed is some information on two new IDEM services: Custom Connect and FaxBack. These services enable you to access IDEM information with the touch of a button -- night or day. By working together, both the regulated community and IDEM can make Indiana a cleaner, healthier place to live.

If you have any questions regarding your fee assessment, please contact Gary Taylor at 317/233-0569. Due to the high volume of telephone inquiries received during the billing period, it may be necessary for you to leave a voicemail message. If you do so, please include your permit number with your message.

Sincerely,

R. J. Henley
Assistant Commissioner
Office of Water Management

Enclosures

P-file

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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Kathy Prosser
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Indianapolis, Indiana 46206-6015
Telephone 317-232-8603
Environmental Helpline 1-800-451-6027

January 10, 1996

Marie F. Osadjan, Attorney
Amoco Corporation
200 East Randolph Drive
P. O. Box 87703
Chicago, Illinois 60680-0703

Dear Ms. Osadjan:

Pursuant to paragraphs 1 and 4 of the Order portion of the Agreed Order (AO) executed in this cause on October 23, 1995, you are hereby notified that the Indiana Department of Environmental Management (IDEM) has received the Soil Characterization Work Plan (SCWP) and the Groundwater Evaluation Study Plan (GESP). The Plans are subject to review by IDEM. Results of the review will be communicated to you upon completion.

In addition, pursuant to paragraph 14 of the Order portion of the AO the stipulated civil penalties as they relate to compliance with paragraphs 1 and 4 regarding initial submission of plans is deemed fully satisfied without payment of the dollar amount.

If you have any questions regarding this matter, please contact Liz Melvin of my staff at 317/232-8434. Thank you for your prompt attention to this matter.

Sincerely,

Mark W. Stanifer, Chief
Water Enforcement Section
Office of Enforcement

cc: U.S. EPA Region 5, Office of Water
Lake County Health Department
Greg Nieman, Burns & McDonnell

RF 1/5

Amoco, Whiting file

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
INDIANAPOLIS

OFFICE MEMORANDUM

To: Ron Pearson

Thru:

From: E. Depositar

cc:

Date: January 4, 1996

Subject: Explosion & Fire at Amoco, Whiting

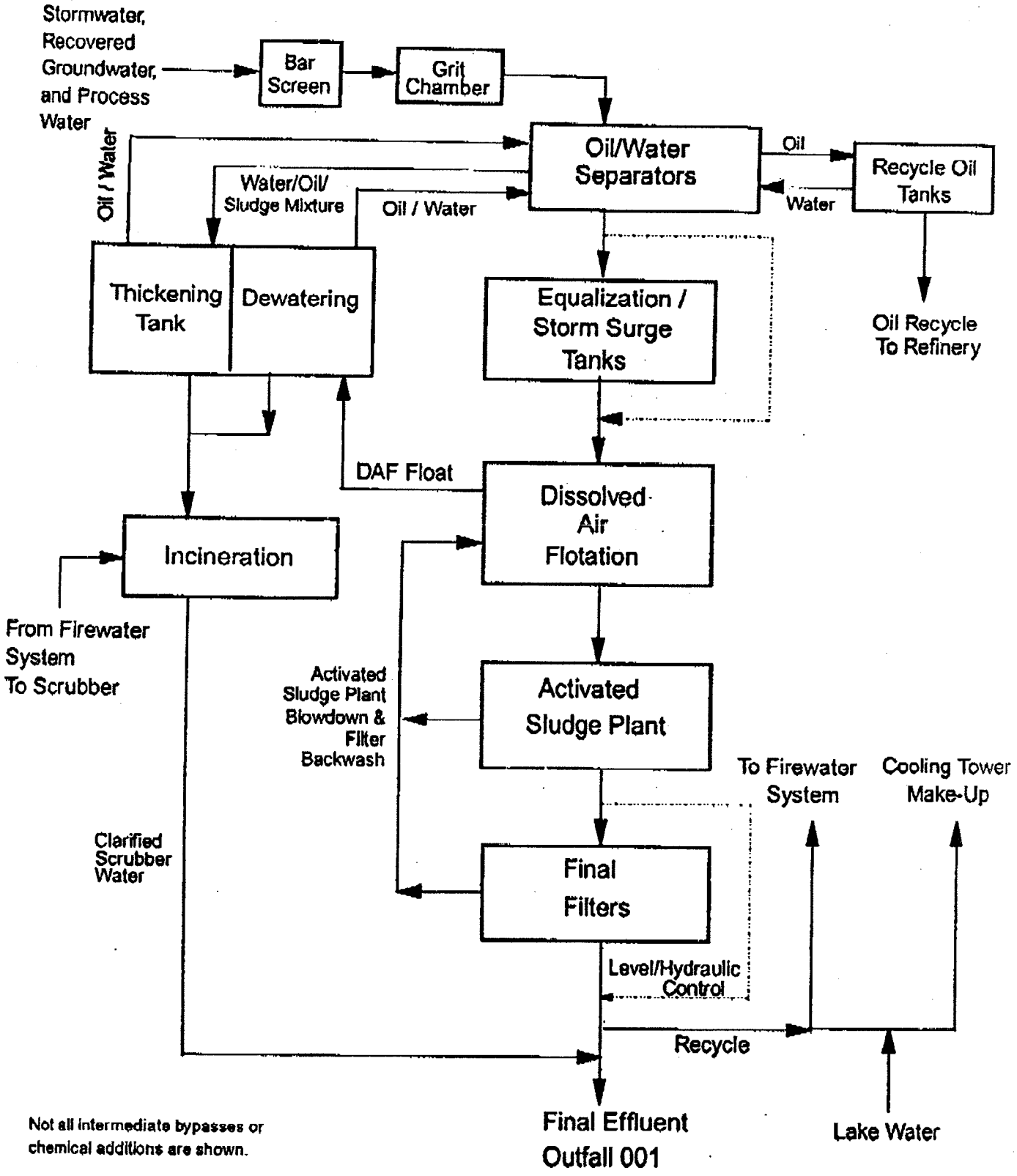
The recent E/F at Amoco occurred at the Bar Screen chamber. The Bar screen remained in tact, however, the E/F was contained at the mechanical rake area which was severely damaged, the roof was blown off from the bar screen/mechanical rake system and charred remains of the building, flooring and the mechanical rake.
The Screen/Rake system is enclosed by design, similar to a wet well, with surface covering, (floor) to access the rake systems.
I believe volatiles (benzene ?) contributed to the cause of the E/F. I noted the mechanical Rake System was powered by an electric motor. As in all powered mechanical rake systems, I would assume the motors used for these applications are not explosion proof.
Amoco was well aware the influent contained volatile, as noted by a posted sign "contains benzene".
I believe, Amoco enclosed the bar screen/rake system, to minimize air emission and the consequence of this, caused E/F. (head space, volatiles, electric motor, BOOM !).
A lesson learned, is to know the characteristics of your "influent waste" but also, a proactive approach to protect the headworks of a treatment plant from an event of entrainment of volatiles in the influent wastes.

Post-it™ brand fax transmittal memo 7671 | # of pages ▸

To R. Pearson	From EDDY
Co. OWM	Co. Depos-TAR
Dept.	Phone #
Fax #	Fax #

Wastewater Treatment Plant - Water Flow Diagram

Amoco Oil Company - Whiting Refinery



Not all intermediate bypasses or chemical additions are shown.

8/94

Amoco fire burns man

— Contaminated oil runoff suspected in explosion

The Times 1/3/96

BY MARK KIESLING
Times Staff Writer

WHITING – One worker was injured in an explosion and fire Tuesday morning at a plant inside the Amoco Refinery.

Edward Wonder, 47, of Glenwood, was treated at St. Catherine Hospital in East Chicago for first-degree burns he suffered in the flash fire inside the water purification plant next to Lake Michigan.

He was released shortly after treatment of the injury to his forehead, a hospital spokesman said.

The fire began at 11:02 a.m. at the plant's bar screen unit, said Fletcher Allen, manager of the refinery's oil movement division. The bar screen is a device that removes large debris from water headed for further purification.

Although officials have not determined the exact cause of the fire – which witnesses said sent a sheet of flame high into the air – the water where Wonder was working was likely contaminated with oil runoff, Allen said.

"We believe the fuel for the fire was the normal hydrocarbons in the wastewater," Allen said.

Neighbors reported the sound of an explosion from the plant, which is located just east of Whiting Park, but Allen would not confirm whether there had been an explosion inside the building.

Allen said "there was absolutely no danger to anyone in the area at any time," and that no pollutants were discharged into the air or water.

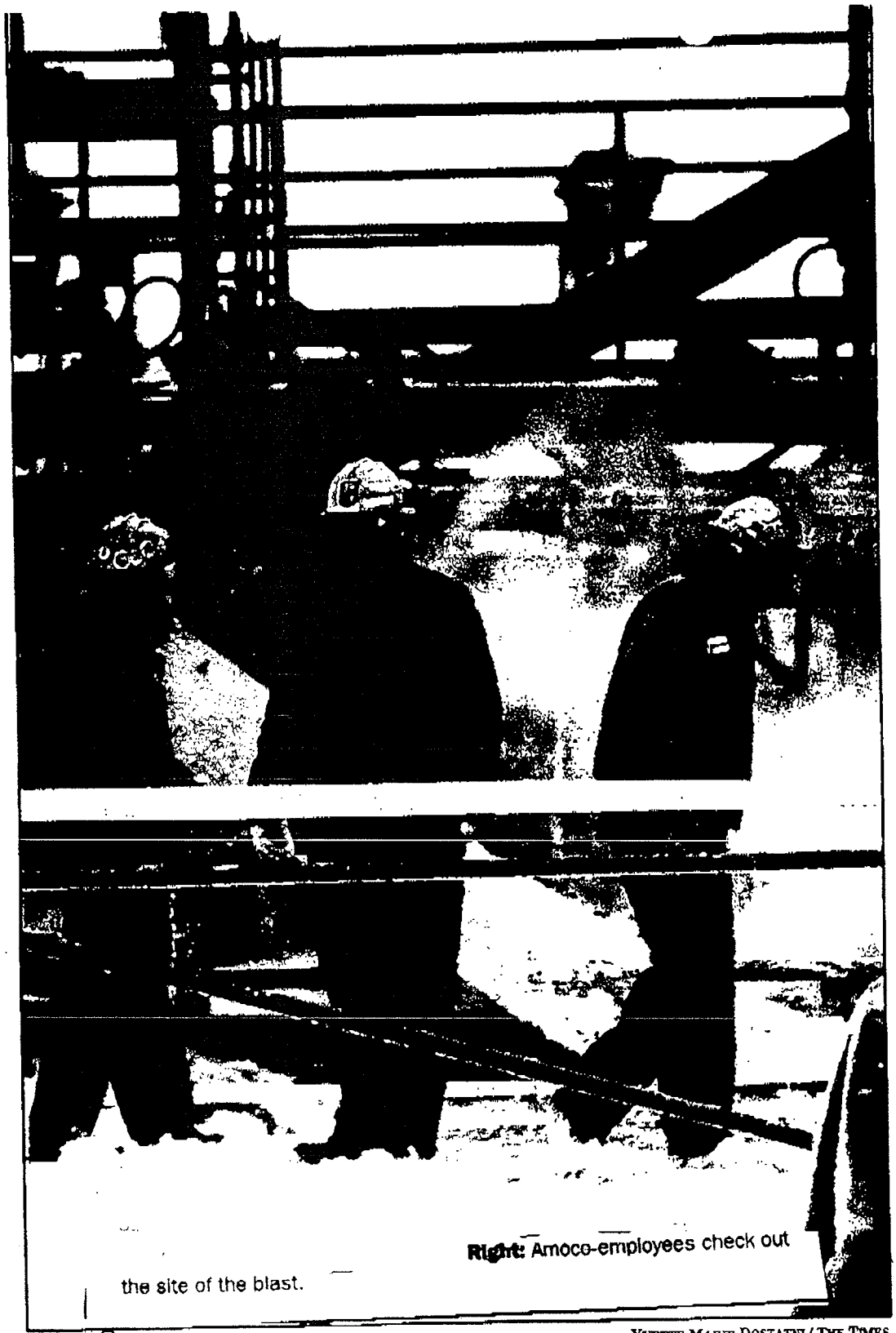
Wonder is an operator at the purification plant, one of some 10 to 15 employees Allen estimated were at the site when the explosion happened. No one else was injured.

Firefighters from Amoco's in-house fire department were able to put the fire out by 11:23 a.m., Allen said, and the purification processes were not interrupted.

KATRINA WITTKAMP / THE TIMES

Above: Fletcher Allen, manager of the Oil Movement Division at Amoco's Whiting Refinery, prepares for a news conference to explain the explosion at the plant's water purification plant.

Picture 2 next page



Right: Amoco employees check out the site of the blast.

YVETTE MARIE DOSTATNI / THE TIMES

Picture 2 Amoco Fire Burns Man 1/31/96

One worker hurt in explosion at Amoco plant

A company spokeswoman says the employee was treated at a local hospital and released.

By Michael Puente

Staff Writer Gary Post Tribune 1/31/96

WHITING — Amoco Oil Co. officials are trying to find the cause of a late Tuesday morning explosion that sent one employee to the hospital with minor burns.

Amoco spokeswoman Elaine Hartman

▼
WHITING

said the explosion occurred about 11 a.m. in the company's water purification department along Lake Michigan. The explosion sparked a fire, which was under control in less than 15 minutes by the company's own fire department, Hartman said.

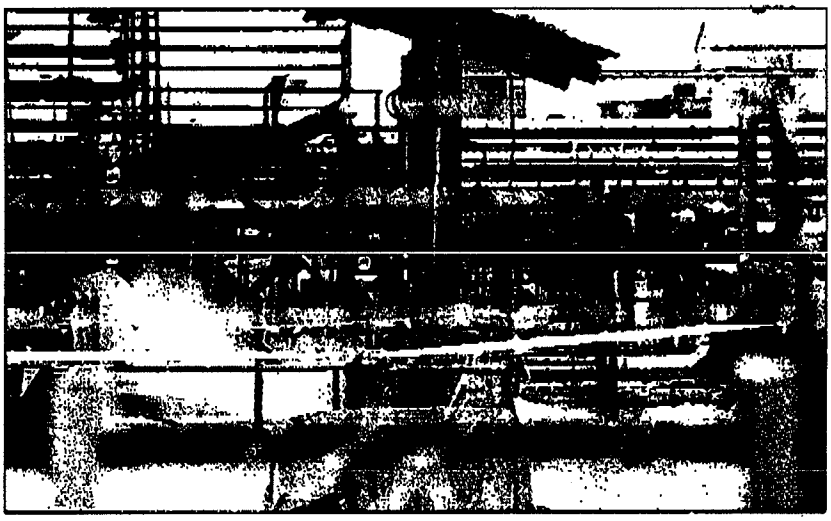
According to Hartman, the fire involved a device called a "bar screen" which removes debris such as tree branches from the water before it is purified.

"It has, like, a rake on it that will pull the solid matter out of the water and put it on the side where it is later collected. Somehow, it was a flash fire there. They do not know the cause yet. It is under investigation," Hartman said. "There was not a release of anything other than black smoke."

The injured worker, not identified by the company, was treated at the scene, but was later taken to St. Catherine Hospital in East Chicago, Hartman said. The worker was treated and released, Hartman said.

The thick, black smoke caused by the fire made the accident appear worse than it was, Hartman said.

No one was evacuated, and the plant continued to operate.



Two Amoco employees look over the scene of an explosion and fire at the Whiting Refinery Water Purification Plant on Tuesday. One worker was injured and was treated at a local hospital.

JEFFREY D. NICHOLLS/Post-Tribune